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40.1
LLNL Training Program Manual

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Recommended for approval by the ES&H Working Group

Approved by: Michael R. Anastasio
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New document or new requirements

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LLNL Training Program Manual•

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LLNL Training Program Manual

1.0 Purpose and Scope

This document defines the LLNL Training Program and is intended to guide job-related training, as differentiated from general educational opportunities, continuing education, career enrichment, and the like. [See the Document 5.1, "Glossary of ES&H Terms," in the *Environment, Safety, and Health (ES&H) Manual* for the definition of "job-related training" and other terms.] This document specifically applies to required job-related training, rather than optional course work (although both types of training may be managed under the same program), and provides guidance for developing and managing individual directorate training programs, including the following:

- Determination of specific training requirements.
- Recording and documentation of training information.
- Qualification of course materials and instructors.

LLNL training policies and guidelines are based on operational needs, state and federal laws and regulations, Department of Energy (DOE) orders, Work Smart Standards, and University of California (UC) guidelines. Policies are issued to ensure that LLNL and subcontractor employees are qualified to assume job assignments and are prepared to adhere to Laboratory requirements. Required training may include, but is not limited to, ES&H, security, and operations training.

2.0 LLNL Training Policies

The following Laboratory policies, along with the LLNL Employee Development Policy, govern job-related and other required training, including ES&H training.

2.1 Required Job-Related Training Policy

LLNL policy for required job-related training is to provide appropriate instructional support to assist employees in developing and maintaining competencies to successfully execute their work assignments. All components of the training program are to be documented.

2.2 ES&H Training Policy

LLNL policy for ES&H training is to ensure that all personnel have training commensurate with their responsibilities, as required to protect health and to perform their work in a competent, safe, and environmentally sound manner. The training standards are to meet or exceed the requirements of DOE, regulatory agencies, and (when appropriate) standards established by industry or professional organizations. The Laboratory provides all training needed to enable its workers to meet those standards and documents the training of its personnel.

3.0 LLNL Training Program Description

The goal of the LLNL Training Program is to assure that each worker has the skills, knowledge, and ability to carry out the responsibilities of his or her work assignment safely and effectively. Key concepts in the LLNL Training Program are the following:

- A two-tier training program. The first tier consists of base skills training. This covers the skills needed for working at the Laboratory and pursuing a particular type of work. Workers need to possess the base skills for a particular type of work to be qualified for an assignment involving that work. The second tier covers training beyond the base skills that are needed for a particular assignment because of the special features of that assignment. Once a worker's base skills have been verified, then he or she shall also complete any assignment-specific training that is required for the task or the facility where the work is to be performed.
- Distributed management. Payroll organizations, program organizations, facility organizations, teaching organizations, and the Laboratory Training Manager shall act in concert to successfully execute the program.

The LLNL Training Program's objectives are to:

- Identify and document all training requirements (including those pertaining to ES&H issues) that are mandated by Laboratory management or outside authority or otherwise determined necessary for performing a particular task or assignment.
- Provide mechanisms to assure that required training is accomplished.
- Document and make available all appropriate training-related information for use by authorized LLNL employees, as well as for authorized external review purposes.
- Assure that the program is structured to permit adequate review and analysis of its effectiveness.

- Maintain a manual (i.e., this document) that provides requirements and guidance for implementing the program.

4.0 Responsibilities

General responsibilities for all workers are described in Document 2.1, "Laboratory and ES&H Policies, General Worker Responsibilities, and Integrated Safety Management," in the *ES&H Manual*. Specific responsibilities for key personnel are listed under each title in the following sections. See the Sections 6.0 and 9.0 for further definition of responsibilities.

4.1 The LLNL Director

The LLNL Director establishes the LLNL training policies and is the senior official at LLNL with responsibility for their implementation. The Director assigns responsibility to the Associate Directors (ADs), in their areas of authority, to conduct training programs and activities that meet the stated objectives of the overall LLNL Training Program.

4.2 Associate Directors

ADs are responsible for seeing that their training programs meet the requirements of this document. The subsections below state specific responsibilities that apply to the four aspects of directorate management: program, payroll, facility, and services. Program responsibility is the line management of activity, payroll is the line management of personnel, facility is the line management of the facility in which the employee works or the activity takes place, and services is the managing of services for other ADs. If there is any uncertainty as to which of these aspects applies to a particular employee, the payroll AD is responsible for clarification.

Each directorate is responsible for ensuring that any training requirement that it develops is disseminated to all directorates that are responsible for complying with the requirement and that appropriate training is available to meet the requirement. Requirements with more than local applicability in the Laboratory shall be communicated to the Laboratory Training Manager. Table 1 summarizes some of the AD responsibilities.

Table 1. Summary of AD training responsibilities.

	Program ADs	Payroll and services ADs	Facility ADs
Base skills		I, M, V	
Program-specific training	I, V	L, V	
Facility-specific training		L, V	I, V
Other required training[a]	I, V	I, L, V	I, V

I = Identify training requirements and communicate the requirements to the appropriate Laboratory organizations, e.g., through Operational Safety Plans (OSPs), Facility Safety Plans (FSPs), and Integration Work Sheets (IWSs).

L = Maintain Laboratory employees' and supplemental labor workers' job component information in the Livermore Training Records and Information Network (LTRAIN).

M = Maintain a system to track Laboratory employee compliance for base skills. (The system may be in the form of a computer database or a paper-and-pencil system when appropriate.)

V = Verify that the required training is provided and satisfactorily completed.

a May include organizational requirements and other required training, e.g., the Academic Strategic Alliance Program (ASAP), Laboratory Emergency Duty Officer (LEDO), and the Personnel Security Assurance Program (PSAP).

Each guest, visitor, student, and other non-employee shall have a sponsoring organization and sponsoring individual unless covered by a specific contract. The sponsoring organization is responsible for identifying training needs for its guests, visitors, students, and other non-employees. For guests, visitors, students, and other non-employees, the sponsoring organization is defined as the organization for which the guest, visitor, student, or other non-employees will be visiting or working. The sponsoring organization acts as a payroll organization for such guests, visitors, students, and other non-employees. The sponsoring individual is responsible for ensuring that his or her guests, visitors, students, and other non-employees receive the training they need.

Individuals (e.g., DOE federal employees) who are not aligned with a payroll organization and have unescorted access are still subject to the training requirements for the facility or operational training requirements with which they are associated.

4.2.1 Program Associate Directors

Program ADs identify qualification and training requirements beyond the base skills for individuals working in activities under their responsibility (including project-specific requirements), document the basis for the requirements they have established, and communicate those requirements to the payroll managers, supervisors, workers, and the effected facility managers. Program ADs also have the responsibility for ensuring that the required programmatic training, as well as the time needed to complete the training, is provided and for verifying that their program-specific training requirements have been satisfactorily completed. If a worker fails to satisfactorily complete required training that is legally mandated or that is an ES&H course that is part of a job assignment, then that worker shall not be allowed to perform, unsupervised, that portion of the job assignment that requires that course. In the context of this document, the program AD is the AD who is responsible for managing and providing supervision of the work activity, regardless of whether the activity is a program in the usual budgetary sense or a support or service activity.

4.2.2 Payroll Associate Directors

Payroll ADs ensure that their employees have the base skills needed for their work categories. They also maintain job component information for the Laboratory employees and supplemental labor workers assigned to them and have the primary responsibility to verify that they meet all training requirements, including those imposed by the Laboratory and by facilities and programs. Payroll supervisors are responsible for ensuring that their employees' training requirements are reviewed with the employees at least annually and whenever a change in assignment changes the training requirements. An employee's Livermore Training Records and Information Network (LTRAIN) questionnaire shall be updated as part of this review to ensure that any new requirements added since the last update have been addressed. The annual training review shall be conducted during the employee's annual performance review, and the supervisor should note the employee's success at meeting the training requirements. The review should cover the accuracy of the current requirements for that employee, specify how well that employee has done in meeting the training requirements, and discuss a schedule for taking courses needed during the next year. The supervisor's performance review should cover how well the supervisor has been doing in reviewing his employees training requirements.

4.2.3 Facility Associate Directors

Facility ADs establish facility-specific training requirements for personnel working in their facilities and document the basis for the requirements they have established. Facility ADs are responsible for:

- Providing notice of the requirements to the payroll and program managers of activities using, or providing services in, their facilities.
- Verifying that the training for facility personnel and for any worker in a facility who is not clearly under the responsibility of an activity manager (i.e., a program AD) has been satisfactorily completed.

The managers of activities using the facility or providing service to the facility then verify that their workers meet the facility's training requirements. A worker who fails to satisfactorily complete required training that is legally mandated or that is an ES&H course that is part of a job assignment shall not be allowed to perform, unsupervised, that portion of the job assignment that requires that course.

4.2.4 Services Associate Directors

Services ADs function like payroll ADs but have additional responsibilities for managing the ES&H activities associated with the services they provide.

4.3 Training Program Committee

The Training Program Committee (TPC) maintains an awareness and overview of the LLNL Training Program and resolves issues as appropriate. The TPC recommends approval of all changes to this document. In particular, the TPC reviews and approves the introduction or removal of institutional training requirements (ITRs) and any substantive changes in the record-retention process or policy. (See Section 5.0 for responsibilities for establishing and identifying training requirements.)

4.4 Assurance Review Office

The Assurance Review Office (ARO) provides assurance to the Director's Office that laboratory organizations are in compliance with the Laboratory ES&H Training Program, as described in this document, and that the quality of the institutionally required ES&H training is sufficient to meet the Laboratory's needs.

4.5 Laboratory Training Manager

The Laboratory Training Manager is the Laboratory's primary resource person regarding policies, guidelines, and standards for required training. The Laboratory Training Manager:

- Serves as the Laboratory's point of contact with external agencies.
- Responds for the Laboratory to requests for participation at policy- and standard-setting meetings of external agencies.
- Interprets external training requirements and makes recommendations for their implementation at the Laboratory.

- Reviews ITR requests submitted by Laboratory organizations and sends recommendations to the TPC; notifies Laboratory organizations and changes course status in LTRAIN when an ITR request is approved; and, if an ITR request is not approved, reviews TPC comments and sends recommendations back to the originating organization.
- Maintains this document and recommends revisions to the TPC for review and recommendation for approval.
- Manages LTRAIN, which contains all completed course records, the LLNL Course Catalog, the requirements tracking system, and the enrollment and scheduling system.

4.6 Training Working Group

The Laboratory's job-related Training Working Group advises and assists the Laboratory Training Manager in coordinating the Laboratory's job-related training program. It also assists the AD for Safety, Security, and Environmental Protection and the Laboratory Training Manager in developing recommendations for policy or procedural changes prior to submission to the TPC.

The Training Working Group is comprised of representatives from selected Laboratory teaching organizations. The chairperson is the Laboratory Training Manager. The chairperson periodically briefs the TPC on the working group's activities, which include:

- Responding to requests from the TPC for reviews and studies.
- Addressing issues raised by programs or teaching organizations concerning job-related training.
- Reviewing generic or institutional issues concerning job-related training.
- Developing recommendations for policy development or change.
- Developing draft standards and guidelines for the implementation of job-related training.
- Facilitating exchange of ideas and information.
- Helping to coordinate job-related training activities of Laboratory organizations.

4.7 Directorate Training Contacts

Each directorate shall have a directorate training contact to serve as its training point of contact to perform numerous functions, which include:

- Disseminating training information from the Laboratory Training Manager's Office to personnel within the directorate.
- Keeping the Laboratory Training Manager's Office informed of significant changes in the directorate training plan.
- Assisting the directorate in completing formal self-assessment of the training plan.
- Coordinating the implementation of required changes to the directorate training program as specified in this document.

4.8 Directorate LTRAIN Administrators

Each directorate shall have a Directorate LTRAIN Administrator (DLA) to serve as its LTRAIN point of contact to perform numerous functions, which include:

- Approving access to LTRAIN within the directorate.
- Coordinating requests for changes to the LTRAIN system within the directorate.
- Meeting on a regular basis with other DLAs to determine the impact of new training requirements, assess possible changes to the system, and resolve other issues that impact LTRAIN.
- Working with LTRAIN users within their directorate to implement procedures and policies for the usage of LTRAIN.
- Relaying new requirements that are reflected in the LTRAIN questionnaire to the areas that should revisit their answers to the questionnaire.

4.9 Teaching Organizations

Teaching organizations provide training as requested. For internal courses, teaching organizations retain documentation of course development and content, assure that courses are updated as required, train and qualify instructors, keep class attendance lists, retain successful course-completion documentation, and furnish appropriate data to LTRAIN in accordance with established time lines (see Section 8.2).

If an external course is taken to satisfy a requirement, an internal course number is to be assigned to the course. If no Laboratory teaching organization offers the course, the organization requiring the course becomes the teaching organization and shall provide it. For external courses, the teaching organization is required to keep copies of the course announcement and the instructor's qualification (when available), maintain proof of course completion, and enter completion information into LTRAIN. If the external course is not being taken to satisfy a requirement, the payroll organization shall enter the pertinent information into LTRAIN.

4.10 Safety, Security, and Environmental Protection Directorate

The Safety, Security, and Environmental Protection (SSEP) Directorate:

- Maintains LTRAIN.
- Makes revisions to LTRAIN at the request of the Laboratory Training Manager.
- Maintains the LTRAIN user manual.
- Establishes internal course numbers for teaching organizations.

4.11 Employee and Organization Development Division

The Employee and Organization Development Division (EODD) of the Human Resources Department provides personnel and guidance, as requested, to assist other teaching organizations in the development and execution of directorate-sponsored training activities.

4.12 Training Coordinators

A training coordinator is an organization's contact for education and training needs. Training coordinators' duties include processing Laboratory forms, answering employee education and training questions, answering training questions for supplemental labor workers assigned to them, and providing information to management as needed. When processing education and training forms (e.g., career development plans, education assistance forms, external training request forms, and internal course registration forms), the training coordinators review the forms, verify the signatures, and sign the forms.

Training coordinators should be familiar with Laboratory education and training programs (e.g., academic degree and course work programs, internal course enrollment procedures, and external training approval procedures) and their own organization's guidelines on education and training. Training coordinators may be assigned additional duties by their directorate, as appropriate.

4.13 Workers

Workers shall attend and satisfactorily complete all assigned training courses. Workers are encouraged to meet with their supervisors and managers to identify any additional training needed to maintain and improve their ability to perform their work effectively and safely. Workers are to notify their DLA if their course completion record is inaccurate. If a worker is required to complete a legally mandated or an ES&H course as a part of a job assignment but fails to satisfactorily complete that training, then that worker shall not be allowed to perform, unsupervised, that portion of the job assignment that requires that course.

5.0 Training Requirements

This section describes training-related requirements.

5.1 Basis for Requirements

Workers at the Laboratory are expected to be capable of carrying out their work effectively and safely. In many cases, workers need to have specific skills, knowledge, and abilities in order to be given an assignment in a particular job or in a particular facility. To assure that such skills, knowledge, and abilities are in place, special training may be required.

Job skills and job-related training fall into several categories, which are described in the following subsections.

5.2 Base Skills

The base skills needed for a general type of work are determined by the nature of the work and are typically identified among the requirements stated in job descriptions. Skill requisites may be met through education, experience, or previous training. Whether or not skill requisites are met is determined by one or more of the following: inspection of credentials, personal interviews, letters of reference, or demonstration of skills. Improvement of base skills is normally accomplished through workers' self-initiated education and training programs.

5.2.1 Assignment-Specific Training

Special training is necessary if program management determines that the normally expected base skills alone do not assure sufficient familiarity with special technical or ES&H-related conditions of a job assignment. Management then sets a requirement that specified training courses shall be completed. For example, all persons engaged in a certain series of experiments using electrical equipment may be required to take a high-voltage safety course.

Special training requirements for generic classes of work assignments may be expressed as institutionally required training. Requirements for ES&H-related training in connection with a specific experiment or operation are stated in an Operational Safety Plan (OSP) if the activity is covered by an OSP. Otherwise, ES&H and other special training requirements are stated in documents issued by the program organization.

5.2.2 Facility-Specific Training

In addition to base skills and assignment-specific training, further training may be required for work in a particular facility. The facility management sets such requirements when the occupants of a facility need to be familiar with special technical or ES&H-related conditions for the facility. Such requirements, especially for ES&H topics, are in general identified in the Facility Safety Plan (FSP) for each area.

Many facilities at the Laboratory have extensive training requirements, which are identified either in the FSP, training implementation matrix, or the Facility Training Program. The requirements may be obtained from the facility manager or training manager.

5.3 Origin of Training Requirements

Training requirements originate in several different ways, either within or outside the organizational group to which the requirements apply.

5.3.1 Institutional Training Requirements

ITRs are special requirements that apply to particular categories of workers throughout the Laboratory and are identified as such in the LLNL Course Catalog. ITRs are divided into three categories: legal, contractual, and laboratory-specific.

Legal requirements are based on a law, regulation, rule, or statute and can be derived from either federal, state, or local requirements. Contractual requirements are based on requirements directed in the UC contract and include DOE orders and directives and UC policies. Laboratory-specific requirements are requirements that the Laboratory imposes on itself based on operational need. Suggested requirements are reviewed by the TPC and may be approved by the Director or the TPC.

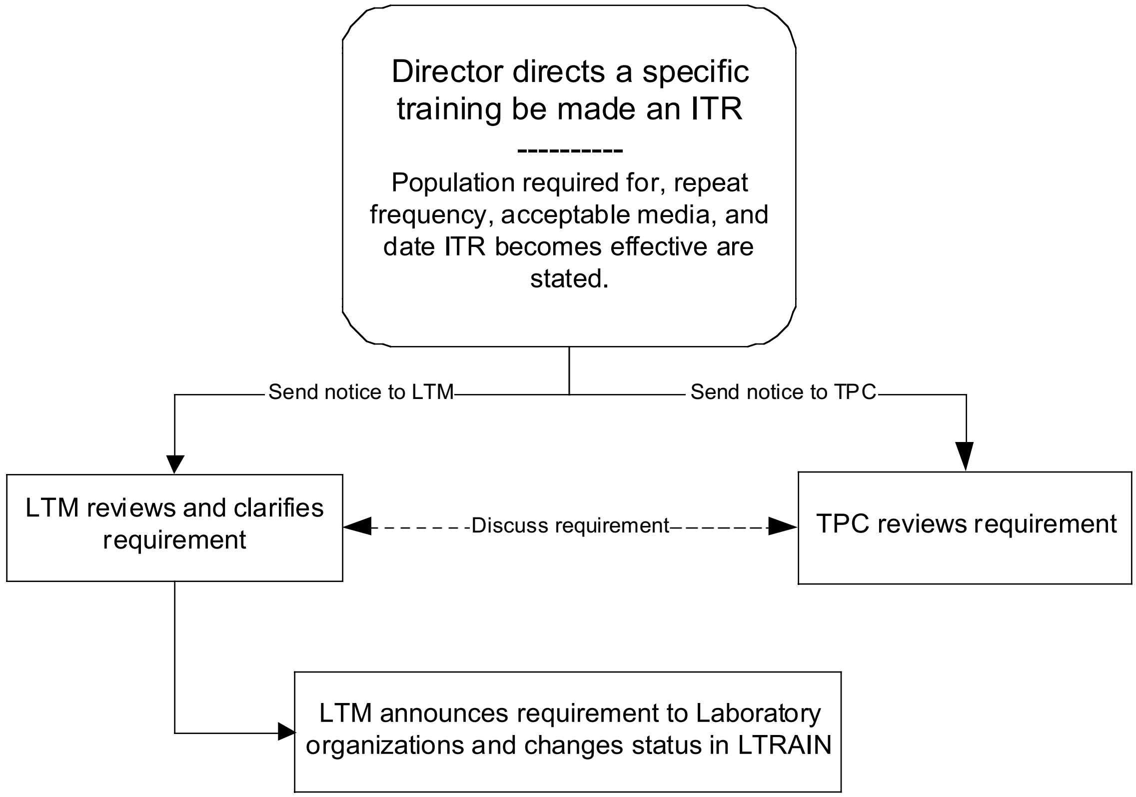
Requirements derived from sources external to the Laboratory are identified and restated in terms appropriate to LLNL by the Laboratory's support organizations, e.g., the Environmental Protection Department (EPD), Hazards Control Department, the Laboratory Counsel's Office, the Quality Assurance Office, and the Safeguards and Security Department. Any other knowledgeable Laboratory organization may also recommend a course requirement on the basis of good practice. No fees are charged to students required to take an institutionally required course. (However, an organization may work out a special arrangement to reimburse a teaching organization for any additional costs associated with that arrangement.)

The process by which the Director establishes an ITR is illustrated in Figure 1. Proposed new institutional course requirements shall be reviewed by the Laboratory Training Manager and forwarded to the TPC with his or her recommendations. The ITR review and approval process is illustrated in Figure 2. Upon approval by TPC or the Director, the requirements are announced to all appropriate Laboratory organizations by the Laboratory Training Manager, are entered into LTRAIN, and appear in the LLNL Course Catalog. Course requirements established and announced by other means are not institutional requirements.

5.3.2 Local Training Requirements

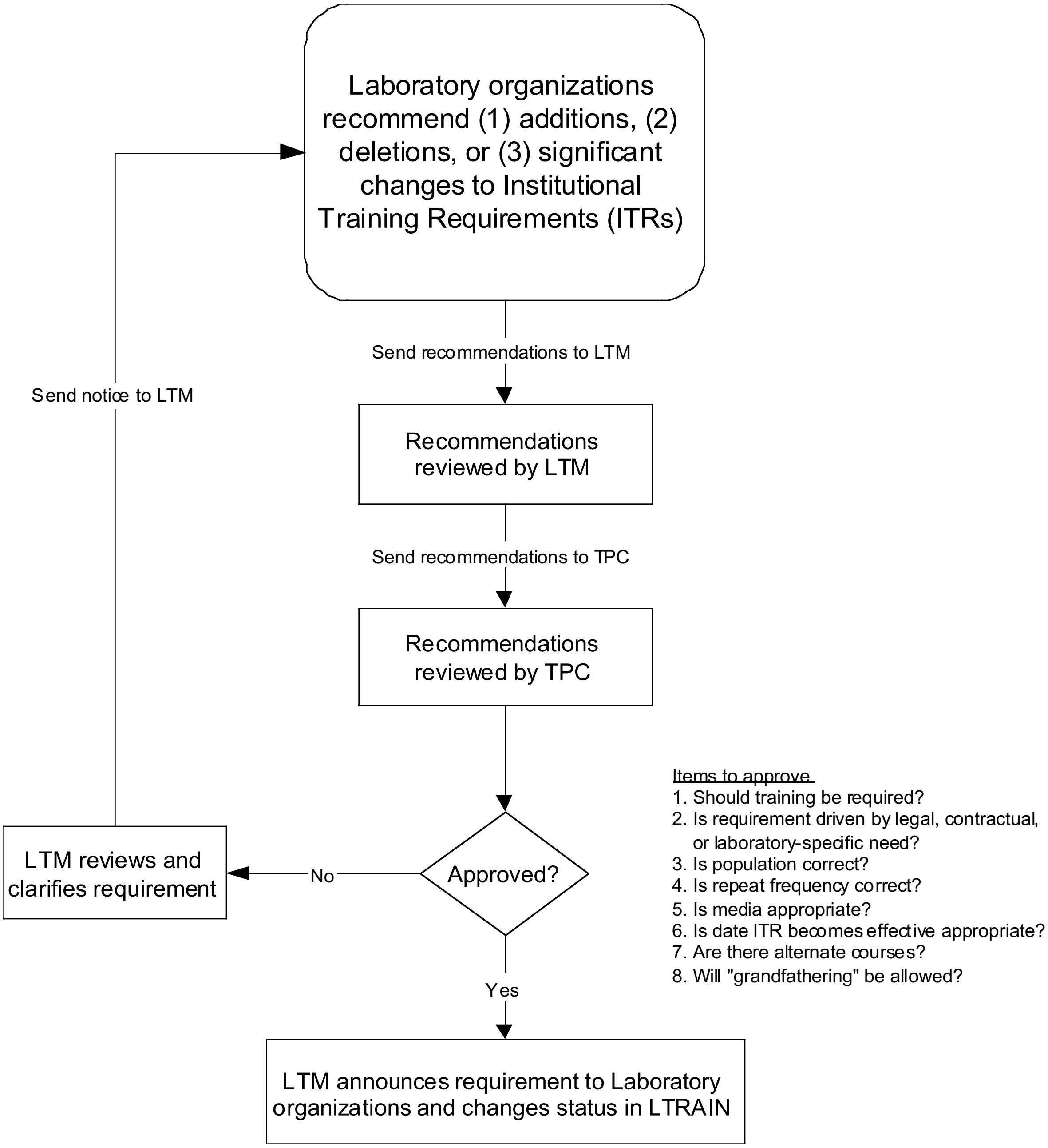
Local training requirements (i.e., training requirements applying to a particular local activity, work area, or category of work) can be generated within a directorate. It is the responsibility of each directorate to review its operations and facilities to determine the need for training requirements that are not already specified as ITRs. Local training requirements, as with ITRs, are divided into three categories: legal, contractual, and laboratory-specific.

For example, a program that is planning an unusual experiment may recognize that the special conditions of that experiment require training to assure workers' ability to carry out the experiment effectively and without detriment to ES&H or security. Similarly, a facility manager may decide that unusual conditions in his or her facility require specialized training. Such conditions are stated in the OSP, FSP, or other documents issued by the responsible directorate. A summary record of such requirements is to be maintained by that directorate. A requirement that an organization places on itself but that is not contained in an OSP or FSP is called an organizational training requirement (OTR).



ITR = Institutional Training Requirement
LTRAIN = Livermore Training Records and Information Network
LTM = Laboratory Training Manager
TPC = Training Program Committee

Figure 1. Director's process for establishing institutional training requirements.



ITR = Institutional Training Requirement
LTRAIN = Livermore Training Records and Information Network
LTM = Laboratory Training Manager
TPC = Training Program Committee

Figure 2. The Training Program Committee's review and approval process for establishing institutional training requirements.

5.4 Identifying Applicable Training Requirements

Each directorate shall:

- Determine what training requirements apply to personnel within its areas of responsibility, whether programmatic, facility, or payroll.
- Examine all institutional requirements to determine which may apply, look to its own existing requirements, and finally consider whether any new requirements should be originated.
- Assure that the requirements are effectively documented, periodically reviewed, communicated, and met and that successful completions are recorded in LTRAIN.

When specifying the training to be provided to fulfill its program, facility, or payroll responsibilities, a directorate shall always make a careful distinction between:

- Formally defined courses, which involve a documented development process as specified in this document, and any other training, coaching, or orientation process.
- An absolute requirement (which involves accountability) and a recommendation for accomplishment of training that is desirable but not required.

Required training shall meet the guidelines established in this document and, when applicable, standards established by government, industry, or professional organizations.

6.0 Managing a Training Program

ADs, in their combined roles as payroll, program, facility, and services managers, are to have, for their directorates, a documented training program that:

- Identifies the key objectives of the training program.
- Describes the training program in the context of the directorate's mission and organization.
- Describes the program's scope, including its incorporation of ES&H, security, operational, and institutional activities.
- Establishes and documents clear lines of responsibility and communication for the training program.
- Lists any training, including refresher training, that is required by the directorate but that is not an ITR.

6.1 Elements of a Training Program

In addition, a directorate training program addresses the following elements:

- Identification and review of training requirements. Technologies, procedures, training directives, and assignments change over time, and such change can result in a change in training requirements. A process to identify and review institutional and operational training requirements shall be established.
- Verification of worker qualifications and requalifications. ADs assure that workers are qualified to work in a safe and effective manner. The completion of training courses required for workers to qualify and periodically requalify for specific assignments shall be documented.
- Interaction across directorate lines. The distributed nature of LLNL's training program requires interactions across directorate lines, e.g., coordination of training requirements for workers. Guidelines describing such interactions are to be included in the directorate training program.
- Course development and execution. Directorates that act as teaching organizations are to incorporate relevant guidelines from this document regarding the development and execution of their own course development and training activities.
- Recordkeeping. Section 8.0 describes the minimum recordkeeping requirements. Directorate training programs are to incorporate the requirements, but may include additional records as they find appropriate.
- Periodic self-assessment of the training program. A formal self-assessment of each directorate's training activities shall be conducted at intervals no longer than 3 years. Informal reviews of training shall also be held between self-assessments, as appropriate. The objective is to assure that training requirements are being met and that workers are qualified for their work.

7.0 Providing the Training

Teaching organizations develop (or obtain) and present courses to meet training requirements. Most ITRs are provided by the Classification Office, Computer Security Office, EODD, EPD, Hazards Control Department, Laboratory Assurance Office, Materials Management Section, Plant Engineering Department, or Safeguards and Security Department. However, all directorates may provide training through either courses given by external vendors or courses developed internally to meet unique training requirements. In such cases, the directorate is also considered to be a teaching organization. The guidance provided in the following subsections covers course development, reviewing and updating courses, and instructor qualification.

7.1 Course Development

Development of courses that are intended to meet formal requirements is to be based on sound organizational and instructional practices. Training courses may take various formats, e.g., formal classroom courses, self-study guides, on-the-job training (OJT), and interactive computer courses. Development is accomplished in five steps: analysis, design, development, implementation, and evaluation. A description of the steps and an example of course development are provided in Appendix A. Before developing a new course to meet a training requirement, it is suggested that organizations query DOE's Cross-Cutting Training Forum (CCTF) to determine whether a course that meets the organization's needs already exists. For more information about the DOE CCTF, contact the Laboratory Training Manager, or visit the following Internet address:

http://cted.inel.gov/cted/cctf/index.cfm

Documentation covering each of the development steps is to be kept by the teaching organization involved. This requirement applies to all required courses, not just those developed by the major teaching organizations.

The degree to which each of the development steps is applied may vary depending on the importance of the training to Laboratory operations, the subject matter, and the regulatory guidance for the training. For example, for some topical areas (e.g., emergency preparedness), this process shall be rigorously followed. For other topics or tasks, a more cursory application of the steps may be appropriate. The responsible directorate is expected to exercise judgment in making the determination. More-detailed guidance on the development process can be obtained from EODD.

When courses are obtained through external vendors to meet a specific requirement, an assessment shall be made to assure sound instructional practices and relevancy of the course objectives and format with regard to the Laboratory's purpose in having its workers attend. Assistance in this process may be obtained from EODD or, when appropriate, a related "topical" teaching organization. (See Appendix B for information about recordkeeping for completed external training.)

For courses or other training procedures that are not expected to meet any formal requirement, the development process is at the option of the course sponsor. For information about exceptions from training and about OJT, see Appendices C and D, respectively.

7.2 Reviewing and Updating Courses

Course objectives, materials, and formats are to be reviewed and updated as appropriate. Review and updating should be part of a defined feedback and improvement process designed to improve the effectiveness of training. Review may include participation by supervisors of the learners, subject-matter experts, instructors, and members of the training staff. Suggested issues to be included in the review are learner job performance; course evaluations by the learners; technological developments; and changes to procedures, institutional requirements, and industry and professional standards.

7.3 Instructor Qualification

Teaching organizations are responsible for the qualifying of instructors. Technical competency, including instructional skills, is to be part of this determination. A more thorough discussion of instructor qualification is provided in Appendix E.

8.0 Recordkeeping

This section describes training-related recordkeeping requirements.

8.1 Livermore Training Records and Information Network

The official records of successful course completions by Laboratory employees and supplemental labor workers are maintained in LTRAIN's course completions module, which is a database that:

- Contains an accurate and current record of all training successfully completed by each Laboratory employee and supplemental labor worker, along with course numbers, course descriptions, and instructors' names.
- Is readily accessible by all authorized Laboratory organizations.
- Is maintained for the Laboratory Training Manager by the SSEP Directorate in concert with teaching organizations.

For more information about LTRAIN, see Appendix B.

8.2 Teaching Organizations

Teaching organizations retain documentation of each course's content and development criteria and the instructor's qualifications, as well as copies of the course outlines and materials, test scores (when applicable), and original attendance and satisfactory completion sheets.

Documentation for courses obtained through external vendors is necessary to establish the appropriateness of the course to the LLNL requirement being addressed and the credibility of the vendor. Successful course completions are transmitted by the teaching organization to LTRAIN within 10 business days of completion of an internal course and 25 business days of completion of an external course.

8.3 Record Retention

Course completion records and administrative training records (e.g., descriptions of course content, examination banks, examination cover sheets, documentation of required performance items, and course lesson plans) for courses related to the handling of hazardous, toxic, or radioactive materials, radiation or criticality safety, or any training in which chronic exposure may have an impact shall be kept for 75 years. Hard copies of administrative training records for all other courses should be kept for a minimum of 5 years after the last session is given.

9.0 Quality Assurance

This document provides for quality assurance as an integral part of the LLNL Training Program. If the requirements and guidelines in this document are followed, quality assurance is accomplished.

This section is an abbreviated outline of the LLNL Training Program from the quality assurance viewpoint. Section 9.1 describes planned actions, and Section 9.2 describes how implementation of the program and achievement of program objectives is verified.

9.1 Procedures

This document defines procedures and objectives for the LLNL Training Program and guidance for accomplishing those objectives and also assigns responsibilities for implementation of the program plan. Specific procedures to be followed are described elsewhere in this document and its appendices. In brief terms, the main elements are as follows:

- A systematic process to determine training requirements.
- A course development and approval process.
- Instructor qualification.
- Worker training.
- Reliable record retention.

Responsibilities for implementation of the Training Program, both Laboratory-wide and within individual directorate training programs, are described in Sections 4.0 and 6.0.

9.2 Verification

The LLNL Training Program shall include specific elements to assure compliance with applicable laws and regulations and with the LLNL Training Program Plan (specified in this document) and to verify that the established objectives are being accomplished. Such activities need not be performed on a stand-alone basis but may be accomplished as part of broader quality-assurance activities. Such activities shall be documented and readily available for review.

9.2.1 Payroll, Program, Facility, and Services Associate Directors

The ADs, in their diverse or individual capacities as payroll, program, facility, and services managers, are to verify the effectiveness of their training programs through a continuous, informal review process, supplemented by formal internal appraisals conducted under the scope of their directorate self-assessment programs. Note that independent appraisals may also be required. The information gained in the review and appraisal processes should be provided as feedback to the appropriate teaching organizations to enable the organizations to improve the effectiveness of training.

Review and appraisal are to verify that required training program actions have been completed and that the objectives of the training are being met.

9.2.2 Institutional Functions

The TPC is chartered and appointed by the Deputy Director for Strategic Operations to maintain an awareness and overview of the LLNL Training Program. The TPC's scope includes definition of training requirements, maintenance of the this document, and monitoring of the status of LTRAIN.

The ARO is tasked with oversight of the Laboratory's ES&H training program. Reports of the ARO's findings are provided to the Director's Office, the TPC chairperson, the Laboratory Training Manager, and the organizations being reviewed.

10.0 Maintenance and Control of This Document and Training Requirements

The Laboratory Training Manager keeps this document current under the guidance of the TPC. ADs proposing new ITRs are responsible for informing the Laboratory

Training Manager, who shall coordinate approval and announcement of the requirement as specified in Section 5.3.

LLNL personnel are asked to assist in keeping this document current. Any person who knows of recent legislation, contract requirements, or Laboratory policies that include training requirements not identified in LTRAIN should forward that information to his or her management or to the Laboratory Training Manager.

Changes to this document are developed by the Laboratory Training Manager (based on input from Laboratory organizations) and submitted to the TPC for review and concurrence. TPC then forwards the recommendations to the Laboratory's Deputy Director for Strategic Operations for approval.

Appendix A

Course Development

Documentation of the course development process is required and shall be retained by the teaching organization involved. The following five-step development process provides a framework for the generation, conduct, and documentation of training courses:

1. Analysis.
2. Design.
3. Development
4. Implementation.
5. Evaluation.

This process provides a systematic determination of learning format and development of instructional materials appropriate to the course objectives. The degree to which each step is applied may vary depending on the importance of the training to Laboratory operations, the subject matter, and the regulatory guidance for the training.

For example, for some topical areas (e.g., emergency preparedness), the process shall be rigorously followed. For other topics or tasks, a more cursory application of the steps may be appropriate. More detailed guidance and course development assistance may be obtained from EODD. A step-by-step description of the process follows.

A.1 Analysis

Analysis is accomplished by gathering information on a particular task or job from procedures, by interviewing subject-matter experts, and by direct observation of job incumbents. The result is an accurate, operational description of the skills and knowledge that are required to perform the job or task.

Documentation should include a description of identified skills and knowledge required to perform the job, a description of the procedure followed in doing the job, and identification of the participants preparing the analysis, including position titles and expertise. Documentation can be accomplished in the form of a memo to file.

A.2 Design

Design is the translation of the skills and knowledge required for a given task, as identified during the analysis phase, into learning objectives and specifications. Learning objectives define a measurable performance to be demonstrated by learners at the end of the instruction. Design specifications indicate conditions (e.g., location, equipment, and atmosphere) that shall be considered in providing the training. The information is used for the development of training materials, tests, and methods.

Documentation should include the learning objectives and conditions that were considered for program development, a description of the procedure followed, and identification of the participants, including position titles and expertise.

A.3 Development

Development includes the determination and generation of training format, materials for the conduct of training, successful completion requirements, and test items. All development is based upon the learning objectives and design specifications identified in the design phase and the necessary skills and knowledge identified in the analysis phase. Both technical and instructional aspects of the design and materials are to be reviewed during the development phase. Note that some required training may be provided, either partially or entirely, in formats other than classroom instruction.

With minor variations, alternatives are to be developed, maintained, and documented in the same manner as other courses, according to the guidance provided in this document. The qualification card (qual card) or checklist used for OJT is an example of a mechanism that may be used to provide control, review, and documentation for an alternative training format. The qual card is developed for OJT from the learning objectives and is provided to the learner in an early stage of the training process. Items listed on the qual card represent the knowledge and skills that the learner needs to demonstrate to complete the training successfully. A signature column is also provided for the evaluator to verify that the student has successfully mastered each item. Qual cards do not need to be concealed from other learners or varied to ensure integrity as is done with classroom test material.

It is important to distinguish formally required practical training, as discussed in the preceding paragraphs, from optional supplementary coaching and demonstration of technique, for instance. Guidelines for the latter (if any) are at the option of the provider.

Documentation should include a copy of training materials, a description of the procedure followed, and identification of the participants, including position titles and expertise. If a controlled examination or qual card is part of the course, then a reference to its location and information on its development should also be included.

A.4 Implementation

Implementation covers the activities related to the actual conduct and administration of the training course, including assigning instructors and support staff, scheduling and coordinating training and facilities, providing the training as prescribed through the previous two steps, testing learners on the course content (when applicable), verifying that learners have participated and have successfully completed the course, and establishing alternative ways for establishing qualification to perform the tasks addressed by the course.

Documentation shall include a participant roster that shows the date and length of the course, whether the learner has successfully completed the course, a description of the procedure followed, and identification of the instructional staff, along with position titles and a brief description of qualifications.

A.5 Evaluation

Evaluation is an appraisal of the effectiveness of training materials, the training process, and the instructor's and students' performance. Appraisal addresses content, presentation, teaching methods, test results, documentation, and (in some cases) posttraining job performance in relation to the task requirements. The results of this evaluation process are to be reviewed and factored into program modifications as appropriate.

Documentation should include conclusions and recommendations generated by the evaluation, a list of the persons to whom the conclusions and recommendations were distributed, what (if any) course or program modifications resulted, and description of the evaluation procedure with identification of participants, including position titles and expertise.

A.6 Example of Course Development

For instance, a department ("Department A") might use the following steps in sponsoring development of a program to train its workers about the environmental laws that regulate how hazardous waste shall be handled.

A.6.1 Analysis

Department A contacts its environmental analyst for information regarding legal requirements pertaining to the training of workers who handle hazardous waste. Relevant regulations are examined for specific topics that need to be covered during training. Department A evaluates the several classes offered by EPD to determine which classes meet their training needs.

A.6.2 Design

Department A determines that its training objectives fall into three basic categories based on the depth of understanding required in the job assignment. The objective in Category 1 is to provide orientation on legal requirements and is directed toward supervisors and other personnel who do not themselves handle waste. The objective in Category 2 is to provide a working knowledge of the legal requirements to allow personnel who generate hazardous waste to handle and dispose of waste properly. Training at this level is tailored to take into account the specific materials being handled in the various Department A facilities. The objective in Category 3 is to provide personnel working in facilities identified as key areas with more-detailed training necessary for certification of their ability to handle the particular forms of waste involved.

A.6.3 Development

Of the waste-handling classes offered by EPD, one or more are identified as useful to Department A's waste-handling training needs. Department A begins working with EPD to develop an additional class to meet the specialized needs of waste accumulation area coordinators. Department A determines that successful completion of the objectives identified in the design phase is to be demonstrated differently by workers in the three described categories. Because the goal for Category 1 workers is merely orientation, adequate training is demonstrated by signature of the class roster. Adequate training for Category 2 personnel is established by signature of the class roster and demonstration of skills in proper on-the-job handling and disposal of waste. Category 3 personnel require a passing grade on an examination covering the course material, together with an on-the-job demonstration of skills, to show adequate training.

A.6.4 Implementation

EPD is the teaching organization responsible for activities related to the actual conduct and administration of the classes. EPD assigns the instructors and support staff, schedules classes, coordinates training and facilities, provides instruction, obtains signatures on the class roster, tests Category 3 learners on course content, and maintains the relevant documentation materials. It is Department A's responsibility to evaluate the impact of the training on participants' job performance.

A.6.5 Evaluation

The classes provided as training on waste handling are evaluated in two ways. First, at the conclusion of instruction, input from the attendees is requested on the content and presentation of the course material. Second, on-the-job performance is evaluated during area inspections and by collecting comments to verify the learners' proper waste-handling technique from appropriate personnel, e.g., the hazardous waste technician, the environmental analyst, the facility manager, and the area supervisor. Information on the effectiveness of the training is shared between Department A and EPD and used to further develop the course material if inadequacies are apparent.

Appendix B

Training Records Systems

The Laboratory, as part of its training program, designed and developed LTRAIN, a training record system that contains four modules:

- Course completions module—The Laboratory's official training database for successful course completions by Laboratory employees.
- Course information module—Provides the information used in the LLNL Course Catalog.
- Requirements tracking module—Provides a mechanism for tracking training requirements for laboratory employees and supplemental labor workers.
- Enrollment and scheduling module—Automates the course enrollment and scheduling process for workers and teaching organizations.

Payroll, program, facility, and service organizations responsible for maintaining training records shall use LTRAIN. The Laboratory Training Manager is responsible for managing this system and acting as the interface between the SSEP Directorate, EODD, teaching organizations, local users, and the TPC. The TPC reviews and approves all significant changes to the recordkeeping systems recommended by the Laboratory Training Manager prior to implementation.

LTRAIN, which uses Oracle™ as its platform, was developed by the Administrative Information Systems (AIS) Department.

B.1 LTRAIN Course Completions Module

This section describes the LTRAIN course completions module.

B.1.1 Description

The LTRAIN course completions module has been designed and developed as the official LLNL training database for successful course completions by Laboratory employees. Records are entered into the LTRAIN by teaching organizations.

Online queries are possible, and a formatted reporting function is available. Reports can be made at the local level after the LTRAIN course completions data have been downloaded.

B.1.2 Data Included

The LTRAIN course completions module includes courses successfully completed by each employee as identified by an employee number or Laboratory identification number. Only course attendance that can be verified is included.

B.1.3 Responsibilities

Teaching Organizations. Teaching organizations are required to enter course completion data into the LTRAIN within 10 business days of completion of an internal course and 25 business days of completion of an external course. An external course taken to satisfy a requirement is assigned an internal course number. If no Laboratory teaching organization offers the course, the organization requiring the course becomes the teaching organization and shall provide it.

For external courses, the teaching organization is required to keep copies of the course announcement and the instructor's qualification (when available). For internal courses, the teaching organization retains documentation of course development and content and keeps class attendance lists. For both internal and external courses, the teaching organization maintains proof of course completion.

Payroll Associate Directors. Payroll ADs are considered to be the teaching organizations of nonrequired external courses taken by their employees and therefore are required to keep copies of the course announcement, including the instructor's qualification (when available), maintain proof of course completion, and enter records of successful completion into LTRAIN.

Safety, Security, and Environmental Protection Directorate. The SSEP Directorate is responsible for maintaining LTRAIN and, with the approval of the Training Manager, makes revisions to the software. The SSEP Directorate generates and distributes standard reports requested by the Training Manager and is responsible for processing user logon requests, for system access for approved users, and for assisting the Laboratory Training Manager's Office in providing groups of internal course numbers for the teaching organizations. Working with the Laboratory's LTRAIN administrator, the SSEP Directorate also maintains the LTRAIN user manual.

Note that the teaching organizations assign course numbers for individual courses based on the groups of course numbers provided by the SSEP Directorate.

B.1.4 Access

The LTRAIN includes only nonpersonal data in the LLNL Course Catalog, which is a business database maintained by the SSEP Directorate. Therefore, anyone with logon capability (i.e., a password) can query, but not change, the data. Only certain individuals, identified by the teaching organizations or payroll organizations, have the ability to enter course completions data into LTRAIN. Requests for logon capability for LTRAIN are handled by the Laboratory Training Manager after being approved by the DLA.

B.2 LTRAIN Course Information Module

This section describes the LTRAIN course information module.

B.2.1 Description

LTRAIN contains the official course information for internal Laboratory courses. Course information is entered into LTRAIN by the teaching organizations and is available to all Laboratory workers through the LLNL Course Catalog, which allows for the searching of course information using several criteria. Course information for a single course or a set of selected courses can be downloaded to local workstations.

B.2.2 Data Included

Course information includes course number, teaching organization, course title, indicator of whether course is currently active or not, total hours, repeat frequency, UC category, vendor name, alternate course information, refresher course information, ITR code, last modification date, description, list of topics, the persons who should attend the course, the persons for whom the course is required, the organization by which the course is required, repeat frequency, prerequisite information, hardware used in the course, dates the course is offered, times of day the course is offered, instruction type, instructor, location where the course is taught, fee, maximum numbers of participants, and registration deadline.

B.2.3 Responsibilities

Teaching Organizations. Teaching organizations are required to enter course information into LTRAIN in a timely manner.

Laboratory Training Manager's Office. The Laboratory Training Manager's Office is required to enter appropriate course information into LTRAIN when changes are made to ITRs. This course information could include "required for" information (i.e., the persons for whom the course is required), repeat frequency, and ITR code.

Safety, Security, and Environmental Protection Directorate. The SSEP Directorate is responsible for maintaining the LTRAIN course information module, including the LLNL Course Catalog and, with the approval of the Training Manager, makes revisions to the software.

B.2.4 Access

The LTRAIN course information module is a business database maintained by the SSEP Directorate. Course information is available to all workers through the LLNL Course Catalog, which is available on the Laboratory's internal web. Only certain individuals, identified by the teaching organizations, have the ability to enter course information into LTRAIN. Requests for logon capability for LTRAIN are handled by the Laboratory Training Manager.

B.3 LTRAIN Requirements Tracking Module

This section describes the LTRAIN requirement tracking module.

B.3.1 Description

The LTRAIN requirements tracking module is the Laboratory database used to track all the training requirements applicable to a person's assignment at the Laboratory. The module provides assistance to Laboratory organizations and workers in stating and fulfilling training requirements; a timely, accurate, and accessible list of actions required to meet training needs of Laboratory personnel; an easy system to check progress towards performance measures; an easy system for programs and facilities to verify training status of their matrixed and payroll personnel; a timely, accurate, and accessible list of the Laboratory's training requirements; an accurate and accessible list of job components for all Laboratory personnel; online entry, query, and reporting capability; and the ability to print course registration forms.

B.3.2 Data Included

The requirements tracking module contains all the training requirements from ITRs, FSPs, OSPs and OTRs. In addition, the module contains a worker's job component information, including roles, hazards to which workers are exposed, work areas, OSPs under which the workers operate, matrixed accounts, payroll account, appointment code, and clearance level.

B.3.3 Responsibilities

Program and Services Associate Directors. Program and services ADs identify qualification and training requirements (including project-specific requirements) beyond the base skills for individuals working in activities under their responsibility, document the basis for the requirements they have established, and communicate the requirements to the payroll managers, supervisors, workers, and the affected facility managers. Program and services ADs are also responsible for ensuring that the required programmatic training, and the time to complete the training, is provided and for verifying that their program-specific training requirements have been satisfactorily completed.

Payroll and Services Associate Directors. Payroll and services ADs maintain job component information for Laboratory employees and supplemental labor workers assigned to them and have the primary responsibility to verify that they meet all training requirements, including those imposed by the Laboratory, facilities, and programs. Payroll supervisors are responsible for ensuring that their employees' training requirements are reviewed with the employees at least annually and whenever a change in assignment changes the training requirements. The employee's LTRAIN questionnaire shall be updated as part of the review.

Facility Associate Directors. Facility ADs establish facility-specific training requirements for personnel working in their facilities and document the basis for the requirements they have established. Facility ADs are responsible for providing notice of the requirements to payroll and program managers of activities using, or providing services in, their facilities and for verifying the satisfactory completion of training for facility personnel and for any worker in a facility who is not clearly under the responsibility of an activity manager (i.e., a program AD).

Laboratory Training Manager's Office. The Laboratory Training Manager's Office manages LTRAIN and is responsible for entering ITRs, FSPs, OSPs, and OTRs into the LTRAIN requirements tracking module.

Safety, Security, and Environmental Protection Directorate. The SSEP Directorate is responsible for maintaining the LTRAIN requirements tracking module and, with the approval of the Training Manager, makes revisions to the software.

B.3.4 Access

LTRAIN is a business database maintained by the SSEP Directorate. Therefore, anyone with logon capability (i.e., a password) can query, but not change, the data. Only certain individuals, identified by the teaching organizations or payroll organizations, have the ability to enter employee job component information into LTRAIN. Requests for logon capability for the LTRAIN are handled by the Laboratory Training Manager after being approved by the DLA. Some LTRAIN requirements tracking reports are available to all Laboratory workers through the LTRAIN internal web page.

B.4 LTRAIN Enrollment and Scheduling Module

This section describes the LTRAIN enrollment and scheduling module.

B.4.1 Description

The LTRAIN enrollment and scheduling module contains teaching organization course schedules. Scheduling information is entered into LTRAIN by the teaching organizations and is available to all Laboratory workers, supervisors, and training coordinators. The LLNL Course Catalog and the LTRAIN application allow for user-authenticated registration in a particular scheduled course.

B.4.2 Data Included

Scheduling information includes course number, course title, date offered, instructor, location, start time, length of course, minimum and maximum number of students, date to send reminder notice to students, number of days required before dropping the class, minimum and maximum cost per student, no-show and late-drop fees (if applicable), and employee cost account for chargeable courses. The module also provides the ability to sort enrollees by need, allow web registration, and display special messages. Each new session scheduled contains the above information with the ability to manage instructors, times, location and number of enrollees, enrollee lists and to post completions electronically at the end of the course.

B.4.3 Responsibilities

Teaching Organizations. Teaching organizations are required to enter course information into the LTRAIN scheduling module and post completions in a timely manner.

Laboratory Training Manager's Office. The Laboratory Training Manager's Office is required to post cost transfers, collected upon the posting of course completions, on a weekly basis to the appropriate financial system.

Safety, Security, and Environmental Protection Directorate. The SSEP Directorate is responsible for maintaining the LTRAIN course scheduling module and, with the approval of the Training Manager, makes revisions to the software.

B.4.4 Access

The LTRAIN course scheduling information module is a business database maintained by the SSEP Directorate. Course schedules are available to all workers through the LLNL Course Catalog and employee training plans, which are available on the Laboratory's internal web. Employees and their payroll supervisor may schedule courses using their password authority. Only certain individuals, identified by the teaching organizations, have the ability to enter course scheduling information into LTRAIN. Requests for logon capability for the LTRAIN are handled by the Laboratory Training Manager.

Appendix C

Exceptions from Training

C.1 Purpose

The purpose of this procedure is to establish guidelines for defining how and by whom exceptions from training may be granted and to describe the documentation required.

C.2 Scope

This procedure provides guidance for granting waivers, challenges, or equivalents for all ITRs and can be used as a guideline for other internal LLNL courses.

C.3 Definitions

Waiver:	Granted to a worker when the course is not appropriate.
Equivalent:	Granted to a worker who can prove to the teaching organization that another course that satisfied the training requirement was taken.
Challenge:	Granted to a worker who can prove proficiency to the teaching organization either by education or experience or by taking a test.

C.4 Responsibilities

This section describes the responsibilities related to training exceptions.

C.4.1 Teaching Organization Managers

Teaching organization managers have overall responsibility for approving exceptions from training for courses they sponsor.

C.4.2 Cognizant Managers

A worker's cognizant manager is responsible for reviewing the worker's previous training, experience, and educational background and, when appropriate, recommending an exception from training to the sponsoring teaching organization. Discretion should be used in granting such exceptions.

C.5 The Exception Process

Figure C-1 provides an overview of the process for obtaining an exception from a training requirement. The procedure is described below.

a. A worker who wishes to be granted an exception from training may request an exception using the Exception from Training form, shown in Figure C-2. If the worker's management (i.e., management requiring the worker to take the training in question) wishes the worker to be granted an exception from training, then that management should request that the worker fill out the Exception from Training form and forward the form for approval.

b. Once the worker has filled out and signed the Exception from Training form, the form is forwarded to management. Once approved by the worker's management, the request is forwarded to the teaching organization that sponsors the training in question.

c. The teaching organization is responsible for reviewing the request for exception from training (i.e., the Exception from Training form) and determining whether an exception from training is to be granted. Note that the exception from training applies only to the current requirement, not to future refresher courses.

d. If the request is for a waiver, then the teaching organization reviews the information provided in the Exception from Training form and determines whether the course is no longer appropriate. For example, a waiver may be requested for a worker who has been employed here for 15 years and failed to take the new-employee orientation when joining the Laboratory. If both the worker's management and the teaching organization agree that taking the course would no longer be appropriate, the teaching organization may grant a waiver.

e. If the request is for an equivalent, then the teaching organization reviews the information provided in the Exception from Training form and determines whether the worker has proven that another course that satisfied the training requirement has been taken. It is the responsibility of the worker to provide the teaching organization with sufficient documentation to determine whether a course taken satisfies the training requirement. Documentation should include verification that the equivalent course was taken, when and where the course was taken, the number of course hours, the name of the organization providing the equivalent course, and a detailed summary of the equivalent course's content (e.g., the course's goals and objectives, a course brochure, course outline, and course format).

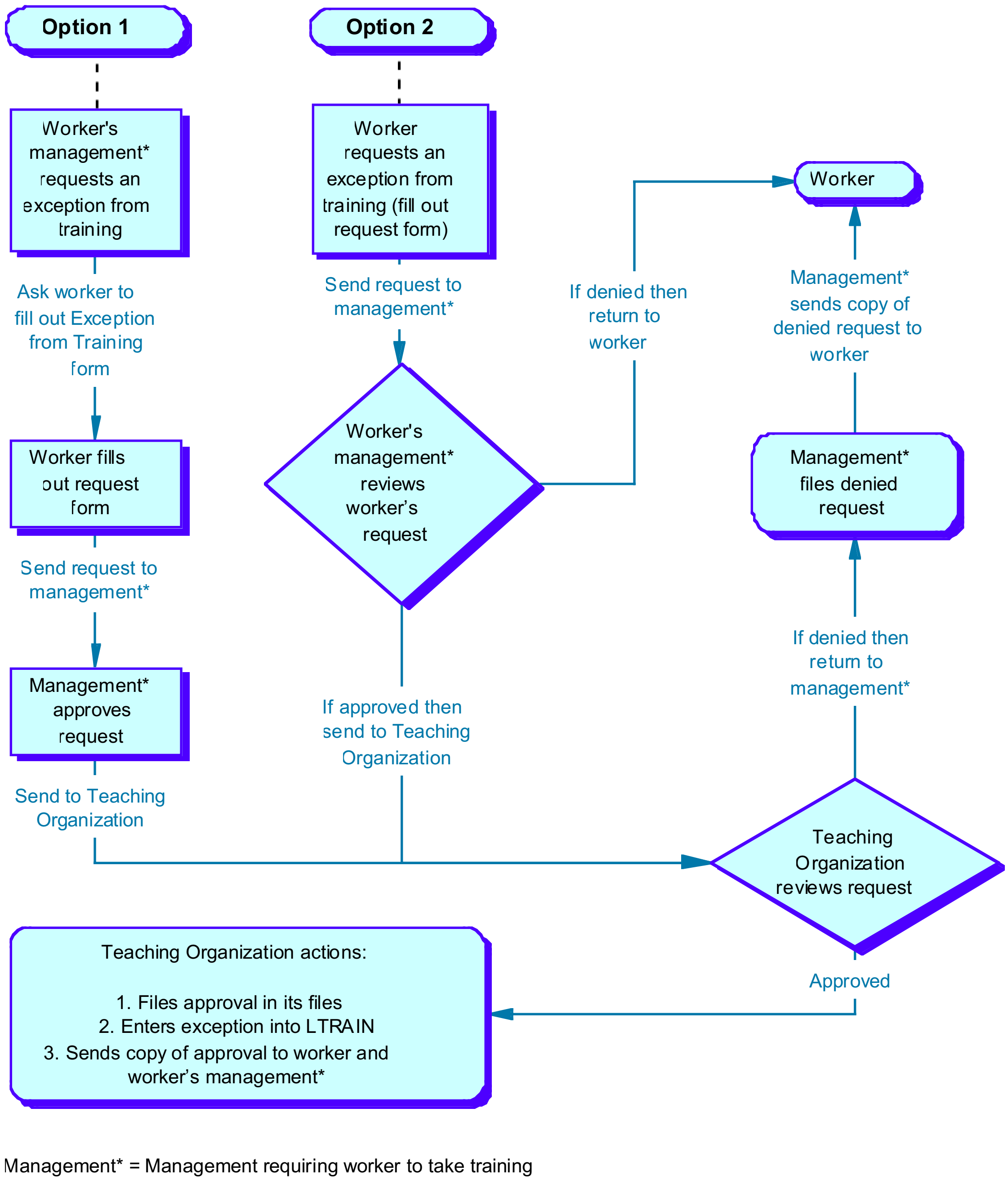


Figure C-1. The exception-from-training process.

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Exception from Training
Lawrence Livermore National Laboratory

Date ______________

Course No. ______________________________
Course Title ______________________________
Sponsoring Teaching Org ____________________

Emp Name ______________
Emp No. ______________
Title ______________
Dept ______________
Bldg/Room ______________
Ext/L-Code ______________

LLNL

SLO ______________
Company

Other ______________
Organization

If requesting a WAIVER:
Justification for request ______________________________________
____
____
____

If requesting an EQUIVALENT:
Equivalent course title ______________________________________
Location equivalent course given ______________________________
Date equivalent course completed (MM/DD/YY) ____________________
Organization providing equivalent course ________________________
Brief Summary of Content (attach additional information if appropriate)
____
____

Figure C-2. Exception from Training form.

Exception from Training
Lawrence Livermore National Laboratory

If requesting a CHALLENGE:

Education Level ____________________ Specialty ______________________________

Institution/Training	Date	Qualification

Military Experience

Position	Date	Qualification

Previous LLNL Experience

Facility/Organization	Date	Position Held

Employee's Signature ________________________________ Date ________________

(over)

Figure C-2. Exception from Training form. (cont'd)

Exception from Training
Lawrence Livermore National Laboratory

Circle one: Approve/Disapprove

Employee's Cognizant Manager ______________________________ Date __________
Signature

______________________________ Position __________
Print Name

Comments (if appropriate) ______________________________

____

____

____

____

Circle one: Approve/Disapprove

Teaching Organization Manager ______________________________ Date __________
Signature

______________________________ Tech Org __________
Print Name

Comments (if appropriate) ______________________________

____

____

____

____

Figure C-2. Exception from Training form. (cont'd)

f. If the request is for a challenge, then the teaching organization reviews the information provided in the Exception from Training form and determines whether the worker has proven proficiency by education, experience, or taking a test. If the worker cannot produce acceptable evidence (e.g., certificates or official transcripts) of previous experience or education, or if the teaching organization manager feels the documentation provided is not sufficient to grant a challenge, then the challenge may be refused. (Note that certain courses cannot be credited by examinations because of regulatory requirements.) Alternatively, the challenge may be granted upon successful completion of written, oral, or performance tests. The results of tests shall be recorded on the Exception from Training—Test Completion Record form (Figure C-3), and test documentation is to be attached to that form. If the worker does not successfully pass a tests, the course is to be required. The teaching organization responsible for that course administers the test and grants the challenge. Teaching organizations are responsible for developing and documenting the criteria for determining successful completion of written, oral, and performance tests.

g. Personnel who were involved in the development and piloting of the course, as well as the instructors used in the implementation of the course, may be granted exceptions from training provided that they understand the course content. Such exceptions from training can be documented using the Exception from Training form. The teaching organization manager need only sign the form, note the reason for granting the exception in the comment section, and enter the exception into LTRAIN using the challenge code (C). The teaching organization is responsible for notifying the worker and his or her management that an exception from training has been granted.

h. If the teaching organization approves the exception from training, then the manager (1) signs the Exception from Training form and files the original, (2) enters the record into LTRAIN using appropriate code (i.e., W for waiver, E for equivalent, and C for challenge), and (3) sends a copy of approval to both the worker and the worker's management.

i. If the teaching organization disapproves the exception from training, then the teaching organization returns the Exception from Training form to the worker's management, which sends a copy of the denied request to the worker and files the original.

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Exception from Training–Test Completion Record
Lawrence Livermore National Laboratory

Date _______________

Course No.____________________________________ Emp Name __________________

Course Title ___________________________________ Emp No.____________________

Sponsoring Teaching Org________________________Title ___________________________

Dept____________________

Bldg/Room________________

Ext/L-Code________________

LLNL___________________

SLO ___________________
Company

Other___________________
Organization

The above individual challenged and passed/failed the course test for which exception from training was requested.

Test	Score	Minimum allowed score	Type (written, oral, performance)	Test Administrator	Date
1	_______	________________	______________	________________	__________
2	_______	________________	______________	________________	__________
3	_______	________________	______________	________________	__________
4	_______	________________	______________	________________	__________

Figure C-3. Exception from Training—Test Completion Record form.

C.6 Records

The documents generated by this procedure are an Exception from Training form and an Exception from Training—Test Completion Record form. The Exception from Training form becomes a record when signed by the appropriate manager. The Exception from Training—Test Completion Record form becomes a record when the appropriate manager signs the form, indicating that the individual requesting the exception has successfully passed the test. Exception records are to be entered into LTRAIN with the appropriate exception-from-training code. The Exception from Training—Test Completion Record form and any written test materials should be kept by the teaching organization for a time period that is consistent with this document.

C.7 References

- U.S. Department of Energy, DOE Order 5480.20, "Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities," February 20, 1991.
- U.S. Department of Energy, *Training Accreditation Program Manual* (TAP1), March 1, 1989.
- U.S. Department of Energy, *Training Accreditation Program Manual* (TAP2), March 1, 1989.
- U.S. Department of Energy, *Training Accreditation Program Manual* (TAP3), March 1, 1989.

Appendix D

On-the-Job Training

The purpose of this appendix is to provide specific requirements and guidance with regards to OJT. OJT is training that is provided to workers to meet identified job-related needs. This type of training is conducted and evaluated in the work environment, usually on a one-on-one basis, while performing or simulating the job or task to be learned.

D.1 Types of OJT

Although the approach to OJT varies depending on a worker's needs, for the purposes of this appendix, the graded approach is divided into three groups: formal, structured, and informal.

D.1.1 Formal OJT

For LLNL-managed activities, formal OJT is defined as the process used when OJT is part of a formal qualification or certification program in an LLNL nuclear facility. The contents of this appendix are aligned with the DOE handbook "Guide to Good Practices for On-the-Job Training" (DOE-HDBK-1206-98). The LLNL OJT program is based on the course development process described in Appendix A and develops training that is performance based. Formal OJT provides structured training in which checklists of job and task procedures state objectives and standards expected to be achieved. OJT is delivered by an individual who is competent to perform the task and who, through knowledge, experience, and formal training, is able to train others to perform the task. OJT allows practical, hands-on experience and training on tasks that are of immediate need to a worker. OJT is limited to situations in which it is administratively and physically possible to conduct the training.

D.1.2 Structured OJT

For LLNL-managed activities, structured OJT is defined as the process that shall be followed when training involves workers affected by contractually accepted standards requiring systematic, documented OJT. Workers who are new to an area may have a thorough technical background and a theoretical understanding of an operation, but may still require OJT to ensure they understand the specific details of an operation. For example, individuals operating an accelerator need to understand the detailed startup procedure, just as workers changing a contaminated high-efficiency particulate air (HEPA) filter need to have hands-on (i.e., on-the-job) training before conducting the operation independently. Work conducted by personnel under instruction shall be carefully supervised to avoid errors that could have significant impact on safety or operations. OJT should be conducted so that the trainee satisfactorily completes all of the required training objectives and receives maximum learning benefit from the OJT.

D.1.3 Informal OJT

For LLNL-managed activities, informal OJT is defined as OJT that is not driven by a formal qualification or certification program or by contractually accepted standards requiring systematic, documented OJT. Depending on the level of formality needed for the OJT and the consequences associated with failure to perform the tasks successfully, requirements identified for formal and structured OJT could prove useful, but are not required. The key to successful informal OJT is to know what tasks need to be trained, verify that the instructor is knowledgeable about those tasks, and define methods to determine whether the training was effective.

D.2 The Five-step Process

OJT, as with other classroom instruction, is approached using a five-step process. Although some of the tasks under each step may be different for OJT, the systematic approach used is the same. The purpose of this appendix is not to provide a detailed how-to guide on developing, implementing, and evaluating OJT, but rather to provide enough guidance for the user to understand the requirements and guidance given.

The five steps and the key tasks associated with those are shown in Table D-1. Each of the tasks listed in Table D-1 should be performed using the graded approach and is described in detail in the subsections below.

Table D-1. The five-step process for on-the-job training.

Steps	Tasks
Analysis	Identify tasks to be trained
Design	Develop learning objectives Select appropriate training settings Develop training/evaluation standards
Development	Create or select training materials Select and train OJT instructors
Implementation	Assign an OJT coordinator Implement OJT program Conduct in-training evaluation Maintain training records
Evaluation	Determine effectiveness of training program Identify changes that may be required

D.2.1 Identify Tasks to Be Trained

For training to be effective, the tasks to be trained need to be identified. Training requirements can be identified by performing a needs analysis, job analysis, and task analysis. The analyses form the basis for determining training needs, developing and maintaining valid task lists, and selecting tasks that require training. For formal OJT, a needs analysis, job analysis, or task analysis shall be conducted, and the results of that analysis documented. For structured OJT, an analysis should be conducted, but, at a minimum, the list of tasks to be trained shall be developed. For informal OJT, the instructor should have a list the of the tasks to be trained.

D.2.2 Develop Learning Objectives

Learning objectives define a measurable performance to be demonstrated by learners at the end of the instruction. For formal OJT, the objectives shall be documented. For structured OJT, the objectives should be documented. For informal OJT, documenting of the objectives should be considered.

D.2.3 Select Appropriate Training Settings

When writing a terminal objective, the training setting shall be considered. The training setting selected should be consistent with the task but balanced against available resources and facility constraints. For formal OJT, the training settings selected shall be documented. For structured OJT, the training settings should be documented. For informal OJT, the training settings should be considered before implementing the training.

D.2.4 Develop Training and Evaluation Standards

Training and evaluation standards (TESs) specify elements, criteria, and conditions required for adequate task performance. Each TES contains two parts: a training standard and an evaluation standard. The training standard contains the task title, learning objectives, and applicable references. The evaluation standard contains a performance test, amplifying conditions and standards, and instructions to the trainee and the evaluator. For formal OJT, the TES shall be documented. For structured OJT, TES should be documented. For informal OJT, TESs should be considered.

D.2.5 Write Training Materials

Training materials include OJT checklists, qualification standards, and OJT guides. A sample OJT instructor guide and a sample OJT checklist are shown in Appendix F. Care should be taken to keep the OJT material simple and useful. For formal OJT, training materials such as OJT checklists, qualification standards, and OJT guides or their equivalents shall be developed and documented. For structured OJT, OJT checklists (or equivalent) shall be developed and documented. Qualification standards and OJT guides or equivalent training materials should be developed and documented. For informal OJT, training materials such as OJT checklists, qualification standards, and OJT guides or their equivalents should also be considered.

D.2.6 Select and Train OJT Instructors

The credibility of a training program (particularly OJT) depends on the quality of the instructors. OJT instructors should be qualified to deliver OJT or conduct performance tests. Several factors should be considered when selecting OJT instructors. OJT instructors should be technically competent and should have the skills necessary to train and evaluate assigned trainees. Additional factors to be considered when selecting OJT instructors include recognition of responsibilities, professionalism, maturity, judgment, integrity, safety awareness, communication skills, personal standards of performance, and a commitment to quality. For formal and structured OJT, technical and instructional competency criteria shall be developed, and documentation showing that the OJT instructors meet those criteria shall be prepared. For informal OJT, the instructors shall be knowledgeable of the tasks being trained, but documentation of the criteria for selecting instructors and documentation to show that the instructors meet those criteria are not required.

D.2.7 Assign an OJT Coordinator

One person from the line organization or training organization staff should be designated to perform the functions of an OJT coordinator. (OJT coordinators provide a valuable function but are not required for formal, structured, or informal OJT.) The OJT coordinator functions may be one part of an individual’s job. An OJT coordinator may have the responsibility for one or more OJT programs. The duties of an OJT coordinator should include the following:

- Issuing OJT checklists and qualification standards.
- Providing the trainee with a list of instructors qualified to conduct the OJT or performance testing.
- Providing assistance to instructors and trainees.
- Tracking trainee progress and setting target dates to reach qualification milestones and goals.
- Ensuring proper documentation of training and performance tests.

- Providing program feedback by evaluating the effectiveness of program materials and instructors.
- Scheduling training to take advantage of unusual or infrequent job-related activities.
- Counseling and assigning remedial training as a result of unsatisfactory performance.
- Maintaining communication with the instructors regarding the OJT program and the qualification progress of individual trainees.

D.2.8 Implement the OJT Program

Implementing an OJT program involves evaluating the knowledge and skills of trainees entering an OJT program to determine whether the trainees meet the entry-level requirements for that specific OJT program. Trainees entering the OJT program need to learn how the program operates and what is expected of them. Trainees should be provided with an OJT checklist, a qualification standard, and other supporting self-study materials. OJT is implemented in the following steps:

1. Preparation for training.
2. Instructor introduction.
3. Explanation of what is to be trained.
4. Demonstration of the task to be trained.
5. Trainee practice under supervision.
6. Conclusion (which could involve a performance test).

For formal OJT, entry-level requirements shall be developed, and documentation showing that the trainee meets those entry-level requirements shall be kept. For structured OJT, entry-level requirements should be developed, and documentation showing that the trainee meets those entry-level requirements should be kept. For informal OJT, the knowledge level of the trainee should be considered.

D.2.9 Conduct In-training Evaluation

In-training evaluations provide data used in the evaluation phase of the process. In-training evaluations usually consist of the following:

- Instructor critique of training.
- Trainee critique of training.
- Trainee performance data (i.e., pretests, progress, and posttests).

For performance tests, the instructor should do the following:

1. Prepare the test.
2. Brief the trainee.
3. Conduct the test.
4. Debrief the trainee.
5. Document the test completions.

For formal OJT, elements of the in-training evaluation system shall be documented. For structured OJT, elements of the in-training evaluation system should be documented. For informal OJT, elements of the in-training evaluation system should be considered.

D.2.10 Maintain Training Records

Maintaining training records is important to a successful OJT program. For formal OJT, documentation showing that the trainee successfully completed the OJT program shall be kept, and course completion shall be entered into LTRAIN. For structured OJT, documentation showing that the trainee successfully completed the OJT program should be kept, and course completion shall be entered into LTRAIN or the organization's local recordkeeping system. For informal OJT, tracking successfully completed training is desirable but not required.

D.2.11 Determine Effectiveness of Training Program

Line management should be actively involved in the evaluation of an OJT program's effectiveness. Observations of facility activities by line management personnel who detect improving or declining job quality and efficiency are a very important source of feedback for training, especially for an OJT program. For formal OJT, a process to determine the effectiveness of the OJT program shall be developed and documented. For structured OJT, a process to determine the effectiveness of the OJT program should be developed and documented. For informal OJT, a process to determine the effectiveness of the OJT program should be considered, but is not required.

D.2.12 Identify Changes that may Be Required

An OJT program's content should be continuously monitored and revised to reflect changes in policies, procedures, system or component design, job requirements, regulatory requirements, or industry guidelines or commitments. Facility and industry operating, maintenance, and safety experiences should be monitored to identify employee performance problems. For formal OJT, organizations shall have a documented process to identify required changes in the OJT program. For structured

OJT, organizations should have a documented process to identify required changes in the OJT program. For informal OJT, identifying changes that may be required is desirable but not required.

D.3 Summary

OJT is a valuable means of delivering training to employees and is conducted and evaluated in the work environment, usually on a one-on-one basis. When OJT materials are kept simple and useful, training can be very effective.

Appendix E

Instructor Qualification

Teaching organizations shall retain the technical and instructional competency criteria and documentation that demonstrates that instructors have met the criteria. Teaching organizations are responsible for qualifying classroom and OJT instructors, as well as guest lecturers. Qualification is to be based on technical ability and instructional skill. Instructor knowledge and skills for the lesson to be taught are to be equal to or greater than the level to be achieved by the students.

Technical competency is to be based on demonstration of technical expertise and proficiency in explaining the subject areas to be taught. The following methods for verifying the appropriate level of technical competence may be used:

- Review of prior training, education, and work experience.
- Observations and evaluation of related job performance.

To maintain technical competence, an instructor should continue to perform satisfactory work in his or her subject expertise and participate in continuing technical training in the subject or discipline that he or she teaches.

Instructional capability is to be demonstrated by successful teaching in the designated instructional format (i.e., classroom, OJT, or lecture). In the case of first-time instructors, successful completion of an appropriate instructor training courses may be useful. Information regarding such courses is available from EODD. Continuing training for instructors that is consistent with evaluations of their performance as instructors should be encouraged.

A teaching organization may use a guest lecturer, typically to supplement the technical content of a course, and is responsible for verifying the lecturer's qualifications. Otherwise, required training is to be conducted only by instructors who are qualified as specified above.

Whether an instructor should also be the evaluator for training is an issue that needs special attention, particularly in the case of hands-on training. It is desirable to make use of the best available subject-matter expertise in evaluating a student, and the possibility of a conflict of interest between supervisor and instructor roles should also be considered. The degree to which such issues are emphasized in selecting an evaluator depends on the consequences of error in applying the acquired knowledge.

Appendix F

Sample OJT Instructor's Guide and Checklist

Sample OJT Instructor's Guide

OJT training event:	**Name of training and the task to be performed (e.g., "Operation of hand-held Garrett metal detector").**
Training lesson code:	**Lesson plan number matching job analysis task inventory number (e.g., PA01).**
Learning objectives:	**The subtasks involved with performing the task (i.e., subtasks from the task inventory). Using the Garrett metal detector task as an example, the following could be the learning objectives:** **<u>PA01.01</u>** **Turn on; operate switches and sensitivity button.** **<u>PA01.02</u>** **Detect improper operation.** **<u>PA01.03</u>** **Properly position detector for scanning.** **<u>PA01.04</u>** **Conduct proper body scans with detector.** **<u>PA01.05</u>** **Properly use sensitivity button when scanning near floor.** **<u>PA01.06</u>** **Execute proper procedure when detector alerts to the presence of metal.**
Prerequisites:	**Any prerequisite training or qualification that a trainee needs to have before this training can occur.**
Training outline:	**Summary of the purpose of the training; activities involved; location and environment where training usually occurs; and constraints on the training (e.g., time of day, day of week, and conflicting operations). Using the metal detector example, the following could be included in the training outline:** **This training teaches the trainee to properly use the hand-held Garrett metal detector to search for the presence of metallic objects on a person's body. The detector operation and procedures for scanning and reacting to alarms are presented and discussed. At the end of this training, the trainee will be able to demonstrate the proper operation of the detector, demonstrate the proper procedure for scanning with the detector, and demonstrate the proper procedures when the detector alerts to the presence of metal.**
Training time:	**Estimated duration of training (e.g., 15 min.).**

Trainer actions:	• **Review OJT guide, lesson plan, and OJT checklist for currency and accuracy.** • **Review performance test criteria.** • **Coordinate training location and time with the following (specific individuals or functions should be identified):** — **Facility management.** — **Hazards Control Department.** — **Persons operating in training area.** — **Security personnel.** • **Acquire necessary training material, training equipment, and training aids; and check for proper operation (list appropriate material).** • **Complete any safety constraints or considerations (list constraints or considerations to be completed).** • **Position TRAINING IN PROGRESS placards as appropriate.** • **Conduct OJT.** • **Document OJT.** • **Conduct performance test, as applicable.** • **Document performance test.** • **Complete posttraining event administrative activities:** — **Restore training site to normal condition.** — **Retrieve TRAINING IN PROGRESS placards.** — **Notify appropriate individuals of completion of training.** • **Complete and forward Training Information Sheet (i.e., OJT checklist) to the Laboratory Training Manager's Office.**
Trainee actions:	• **Review OJT checklist.** • **Obtain necessary personal equipment.** • **Review safety considerations and constraints with instructor.**
Resources:	**List any additional resources or references regarding training the task to be performed (e.g., preceding OJT training leading up to this training; training subsequent to completing this particular training; and complementary training events).**
OJT lesson plan:	**An OJT lesson plan is to be developed and included in this instructor guide. The manuscript of the body may be presented in a task statement format, i.e., a format that presents the steps to be followed in conducting the OJT and performing the task. Sufficient detail should be included to ensure standardized performance of the activity. The trainer may write the OJT lesson plan with assistance from a training specialist.**

Sample OJT Checklist

Trainee's Name: **Date:**

Trainer's Name:

Task to performed:	
Condition:	
Standard for performance:	
Safety considerations:	

Method of Accomplishment (MOA): P (perform), S (simulate), O (observe), D (discuss)

Task #	MOA	Task Description – Initiators/Terminators			Remedial	
			Pass	Fail	Pass	Fail

Trainer's Evaluator's Signature: ________________________________

Remarks: